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## ARSENURINAE AND CERATOCAMPINAE (SATURNIIDAE) OF RIO GRANDE DO SUL STATE, BRAZIL

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**ABSTRACT.** The present work aims to offer a list of Arsenurinae and Ceratocampinae species known to occur in Rio Grande do Sul, Brazil. The list is based on bibliographical data, newly collected specimens, and previously existing museum collections. The Arsenurinae are listed in the following genera (followed by number of species): *Arsenura* Duncan, 1841 (4), *Caio* Travassos & Noronha, 1968 (1), *Dysdaemonia* Hübner, [1819] (1), *Titaea* Hübner, [1823] (1), *Paradaemonia* Bouvier, 1925 (2), *Rhescyrtis* Hübner, [1819] (1), *Copiopteryx* Duncan, 1841 (2). Ceratocampinae are listed in *Adeloneivaia* Travassos, 1940 (3), *Adelowalkeria* Travassos, 1941 (2), *Almeidella* Oiticica, 1946 (2), *Cicia* Oiticica, 1964 (2), *Citheronia* Hübner, [1819] (4), *Citioica* Travassos & Noronha, 1965 (1), *Eacles* Hübner, [1819] (4), *Mielkesia* Lemaire, 1988 (1), *Neocarnegia* Draudt, 1930 (1), *Oiticella* Travassos & Noronha, 1965 (1), *Othorene* Boisduval, 1872 (2), *Procitheronia* Michener, 1949 (1), *Psilopygida* Michener, 1949 (2), *Scolesa* Michener, 1949 (3) and *Syssplinx* Hübner, [1819] (1). *Rhescyrtis pseudomartii* Lemaire, *Titaea tamerlan tamerlan* (Maassen), *Eacles bertrandi* Lemaire, *Eacles mayi* Schaus and *Mielkesia paranaensis* (Rego-Barros & Mielke) are new records for Rio Grande do Sul. To facilitate identification we provide photographs, morphological characteristics of each species, and dichotomous keys. Also, we discuss briefly their distribution and the inventorying status of Lepidoptera in Rio Grande do Sul.

**Additional key words:** inventory, biodiversity, distribution, survey

The Saturniidae are among the world's most popular and beautiful groups of moths, with an enormous variety of sizes, shapes and colors. Their beauty and peculiarity have attracted many lepidopterists, making them relatively well studied and frequently collected. The Neotropical Region, despite Lemaire's extensive work (1980, 1988, 1996), is poorly documented in some places. In this paper we present a study of the Arsenurinae and Ceratocampinae of Rio Grande do Sul, the southern-most Brazilian State, a region with limited documentation.

The Lepidoptera survey from Rio Grande do Sul started at the end of the nineteenth century with publications by Weyermer (1894) and Mabilde (1896). Later, Ronna (1923, 1933) and Biezanko and collaborators (1939, 1948, 1949, 1957, 1986) made important contributions throughout much of the

twentieth century. The collections of Mabilde and Ronna are at the Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul, in Porto Alegre, and Biezanko's material is deposited at the Museu Entomológico Ceslau Biezanko, in Pelotas. The present study aimed to update the existing lists of Arsenurinae and Ceratocampinae in Rio Grande do Sul, to identify diagnostic characters for these species, and to map their distribution in the State.

### Arsenurinae

The species of the Arsenurinae Jordan, 1922 are generally large with a robust body and gray or brown ground color; the most significant external feature is the variable shape of the wings, especially the hindwing, which is more or less prominently tailed in most of the species (Lemaire, 1980). They contain large and

protuberant mandibular rudiments; the tibial epiphysis is about half as long as the tibia; the forewing has the discal cell closed, vein M1 not or only briefly stalked with radius, M2 arising from the cell at about the middle of outer margin; vein 3A of the hindwing is very short or absent (Michener 1952; Lemaire 1980).

According to Silva *et al.* (1968) and Stone (1991), the caterpillars are polyphagous, feeding on Annonaceae, Euphorbiaceae, Lauraceae, Malvaceae, Myristicaceae, Sapindaceae and Sapotaceae. The species *Arsenura xanthopus*, according to Mariconi & Lordello (1953), was considered a pest of *Luhea divaricata* Mart in the southern part of Brazil.

The Arsenurinae are exclusively distributed in the Neotropical region (Michener 1952; Lemaire 1980, 1996), being well-represented in southern Brazil where about 36% of the known species occur (Lemaire 1980). There are 58 known species of Arsenurinae, 27 of which have been reported for Brazil (Lemaire 1996).

### Ceratocampinae

The species of Ceratocampinae Harris, 1841 are generally characterized by the peculiar structure of the male's antennae, usually sphingiform wings of males, and the comparatively long and heavy body in both sexes. They are extremely variable in size, including some of the smallest as well as some of the largest American Saturniidae (Lemaire 1988).

The antennae of the male are quadripectinate for about the three-fifths of the flagellum and then simple to the apex; the female's antennae either are like those of the males or simple. There are three or four radial branches in the venation of the forewing; the discal cell is closed; vein M1 is basally stalked with the radials, M2 arises in front of the middle of the apex of the discal cell; vein 3A of the hindwing is present; veins CuA1 and CuA2 arise directly from the cell (Michener 1952; Lemaire 1988).

The caterpillars are polyphagous, feeding on Anacardiaceae, Aquifoliaceae, Asteraceae, Betulaceae, Burseraceae, Caprifoliaceae, Caryocaraceae, Cochlospermaceae, Combretaceae, Cupressaceae, Ebenaceae, Euphorbiaceae, Fabaceae, Fagaceae, Hamamelidaceae, Juglandaceae, Lauraceae, Loranthaceae, Malvaceae, Melastomataceae, Moraceae, Myricaceae, Myrtaceae, Oleaceae, Pinaceae, Platanaceae, Rosaceae, Rubiaceae, Salicaceae, Sapindaceae, Sapotaceae and Ulmaceae (Silva *et al.* 1968; Stone 1991; Pastran 2004). According to Gallo *et al.* (2002), *Citheronia laocoon* (Cramer, 1777) and *Eacles imperialis magnifica* Walker, 1855 were considered pests, the former of *Psidium guajava* (L.)

and *Psidium cattleianum* (Sabine) and the latter of *Coffea arabica* L. The larvae are remarkable for their hypertrophy of the armature, especially in the early instars, which has been dubbed "diabolic"; the pupae are more or less deeply situated in the soil, they usually have spines which certainly help them ascend to the surface of the soil just prior to emergence of the imago (Lemaire 1988).

According to Lemaire (1988), Ceratocampinae are widely distributed from southern Canada to northern Argentina, being well-represented in southeastern Brazil and adjacent areas; there are 170 known species in 27 genera, 86 of which have been reported for Brazil.

### Rio Grande do Sul

Rio Grande do Sul has an area of 282.184 km<sup>2</sup> and represents 3.32% of the Brazilian territory. It is the southern-most State of Brazil, where the northern extreme lies at latitude of 27°03'42"<sup>s</sup> and the southern limit at 33°45'09"<sup>s</sup>. The weather has been characterized as mesothermic humid, without a dry season and highly humid in some areas.

The climate uniformity across the State is a striking feature. The dynamic factors are represented by atmospheric circulation, especially the Atlantic and Polar anticyclone masses of air. Static factors carry out local influences. Maximum temperature averages are 21°C to 25°C, and minimum 10°C to 14°C, with extremes being determined by latitude and altitude; at higher altitudes, mainly in northeast, low temperatures reach 4°C, and, in the plain, the highest are above 35°C. Snowfall is occasional, but frost in winter is frequent. Precipitation is regularly distributed over the year, with a monthly average between 100mm and 150mm (Vieira 1984).

The north-northeast portion of Rio Grande do Sul includes the southern extent of the Atlantic forest biome, comprising 37.4% of the State. This region has a mountainous relief rising from the sandstone-basaltic plateau. The altitude varies from 400m to a bit more than 1000m, with the highest elevations located in the northeast. The vegetation is represented mainly by *Araucaria* moist forest, deciduous tropical forest and semi-deciduous tropical forest, with a small portion of Atlantic moist forest near the coast.

The Pampa biome, which also includes Uruguay and part of Argentina, is responsible for the remaining 63.6% of the State. The geomorphology of this region includes the Central Depression located below the sandstone-basaltic plateau, the Campan Plateau in the west-southwest, with altitudes rarely above 200m, the South-riograndense Plateau (Riograndense Shield),



with average altitudes from 200m to 400m, and, finally, the Coastal Plain. The vegetation is characterized by fields and savannas, with some portions of semi-deciduous tropical forest.

Details about the vegetation of Rio Grande do Sul are presented in Figure 1.

MATERIALS AND METHODS

Data were obtained from bibliographical sources, newly collected specimens and analysis of 534 specimens in the collections of Centro de Pesquisa Agropecuário Clima Temperado da Embrapa (CAMB), Museu Científico da Universidade Católica de Pelotas (MUCP) and Museu Entomológico Ceslau Biezanko (MECB), in Pelotas; Museu Anchieta de Porto Alegre (MAPA), Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul (MCTP), Museu de Ciências Naturais da Fundação Zoobotânica do Rio Grande do Sul (MCNZ), Museu Ramiro Gomes Costa da Fundação Estadual de Pesquisa Agropecuária (MRGC) and Setor de Entomologia da Faculdade de

Agronomia da Universidade Federal do Rio Grande do Sul (FASE), in Porto Alegre; Coleção Lepidoptera Alfred Moser (CLAM), in São Leopoldo; Departamento de Zoologia da Universidade Federal do Paraná (DZUP), in Curitiba; Museu de Zoologia da Universidade de São Paulo (MZSP), in São Paulo and Museu Nacional da Universidade Federal do Rio de Janeiro (MNRJ), in Rio de Janeiro.

Specimens were identified based on the eurrent sources (Draudt 1929–30; Lemaire 1988; D’Abrera 1995) and comparisons with specimens in the collections listed above. Nomenclature follows Lemaire (1996). Measurements of forewing length were taken for the specimens observed in the collections from Porto Alegre and São Leopoldo. Hostplant family information was gathered from Silva *et al.* (1968), Stone (1991) and Pastran (2004).

Species are listed following the arrangement of Lemaire (1996); “f” indicates female and “m” male. New records for Rio Grande do Sul are identified with an asterisk.

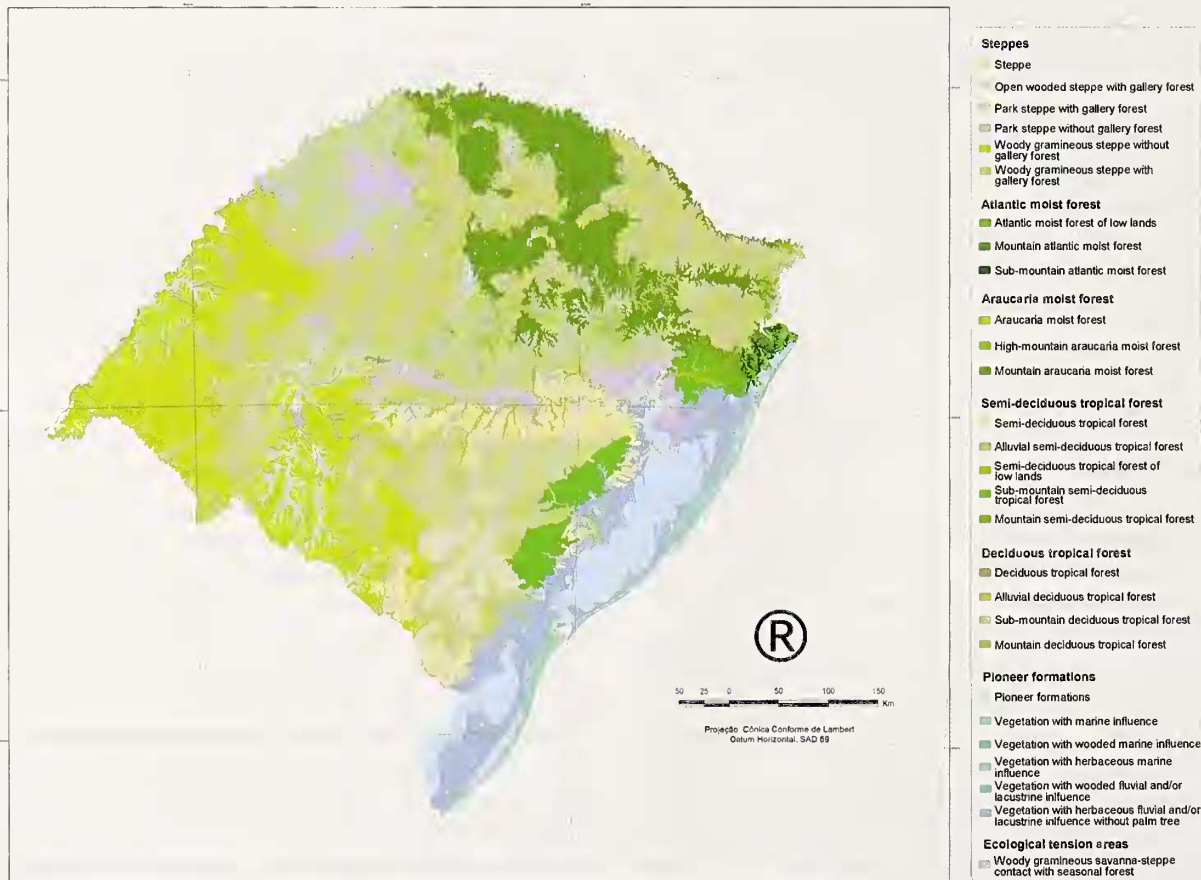


FIG. 1. Simplified map of the vegetation of Rio Grande do Sul. Following Projeto Radambrasil - IBGE (1986).

## RESULTS

The available evidence indicates that 12 species of 7 genera for Arsenurinae and 30 species of 15 genera for Ceratocampinae occur in Rio Grande do Sul.

**Arsenurinae Jordan, 1922*****Arsenura armida* (Cramer, 1779) – Fig. 4.**

*Rhescyntis erythrina*; Mabilde (1896)  
*Arsenura erythrinae*; Costa Lima (1936)  
*Rhescyntis erythrinae*; Silva *et al.* (1968)  
*Rhescyntis (Arsenura) armida*; Biezanko (1986)

Forewing length - f: 75.4mm [according to illustration by Lemaire (1980)]; m (9): 63.6 ± 1.2mm.

Host families: Annonaceae, Euphorbiaceae, Malvaceae.

Flight period: January to March, June, September and October.

Material examined. Porto Alegre, (no date), (no collector), 1 m (MZSP); Santa Maria, 15.i.1926, (no collector), 1 m (MCNZ); Caxias do Sul, 1932, (no collector), 1 m (MCNZ); Pelotas, 15.i.1939, Irmãs Figueiredo leg., 1 m (CAMB); Pelotas, ii.1939, Irmãs Figueiredo leg., 1 m (CAMB); Santa Maria, 09.iii.1971, S. Bressan leg., 1 m (MECB); Santa Maria, 15.i.1973, S. Carvalho leg., 1 m (MECB); Pelotas, 12.i.1975, A. Witauper leg., 1 m (MECB); Pelotas, 12.vi.1976, Edison leg., 1 m (MECB); Morro Reuter, 02.i.1983, A. Moser leg., 3 m (CLAM); Morro Reuter, 09.i.1983, A. Moser leg., 1 m (CLAM); Passo Fundo, 07.ix.1994, A. C. P. Peres leg., 1 m (MCTP); Irai, 27.x.1998, A. Specht leg., 1 m (MCTP); Derrubadas, 24.i.2001, R. Di Mare leg., 1 m (MCTP); Morro Reuter, 17–19.i.2005, A. Moser leg., 1 m (CLAM).

***Arsenura biundulata* Schaus, 1906 – Fig. 5.**

Lemaire (1980); Lemaire (1996); Nunes *et al.* (2003)  
*Rhescyntis (Arsenura) biundulata*; Biezanko (1986)

Forewing length - f (2): 88.3 ± 0.3mm; m (27): 83.8 ± 0.6mm.

Flight period: January to May.

Material examined. Canoas, (no date), (no collector), 1 m (MCNZ); Porto Alegre, (no date), A. Miranda leg. 1 f (MZSP); Porto Alegre, (no date), A. Miranda leg. 1 m (MZSP); Caxias do Sul, (no date), (no collector), 1 m (MAPA); Caxias do Sul, 25.iv.1927, (no collector), 1 m (MCNZ); Porto Alegre, 29.i.1934, A. Baumann leg. 1 f (DZUP); Pareci Novo, 08.v.1937, (no collector), 1 m (MAPA); Charqueadas, iii.1941, (no collector), 1 m (MAPA); Porto Alegre, 10.iv.1961, C. Mario leg., 1 m (FASE); Porto Alegre, iv.1962, C. Sallenave leg., 1 m (FASE); Porto Alegre, 15.i.1946, A. Baumann, 1 m (DZUP); Pelotas, 21.iii.1957, Modernell leg., 1 m (MECB); Canela, 19.i.1964, F. Luca leg., 1 m (FASE); Dois Irmãos, 01.v.1971, D. Scholla leg., 1 m (FASE); Porto Alegre, 06.iv.1964, S. Manfredini leg., 1 f (FASE); Porto Alegre, 10.v.1964, Leonir leg., 1 m (FASE); Porto Alegre, 20.iv.1968, R. Baerver leg., 1 m (MCTP); Pelotas, 15.ii.1971, M. Elias leg., 1 m (MECB); Porto Alegre, 21.iv.1971, C. B. Costa leg., 1 f (FASE); Porto Alegre, 23.iv.1971, Neuremberg leg., 1 m (FASE); Porto Alegre, 29.iv.1971, E. Soares leg., 1 m (FASE); Porto Alegre, 29.iv.1971, N. Cortes leg., 1 m (FASE); Santa Maria, 16.iv.1973, S. Carvalho leg., 1 m (MECB); Porto Alegre, 20.v.1975, Illegible leg., 1 m (FASE); Pelotas, 12.iii.1983, Reinhardt leg., 1 m (MECB); São Francisco de Paula, 11.ii.1999, A. Specht leg., 6 m (MCTP); São Francisco de Paula, 12.ii.1999, A. Specht leg., 1 m (MCTP); São Francisco de Paula, 12.ii.1999, A. Specht leg., 1 m (MCTP).

***Arsenura orbignyana* (Guérin-Méneville, [1844]) – Fig. 6.**

Lemaire (1980)

Forewing length - f: 64.8mm [according to illustration by Lemaire (1980)]; m (8): 61.2 ± 0.8mm.

Flight period: January, February, May, September to November.

Material examined. Porto Alegre, (no date), (no collector), 1 m (MZSP); Estrela, 20.xi.1919, (no collector), 1 m (MAPA); Pareci Novo, 21.x.1933, (no collector), 1 m (MAPA); Santa Cruz do Sul, 29.ii.1937, A. Baumann leg., 1 f (DZUP); Pareci Novo, x.1945, (no collector), 1 m (MAPA); Santa Cruz do Sul, 29.i.1946, A. Baumann leg., 1 m (DZUP); Pareci Novo, x.1947, (no collector), 1 m (MAPA); Pelotas, 05.x.1975, J. Paludo leg., 1 m (MECB); Pelotas, 10.x.1976, (no collector), 1 m (MECB); Porto Alegre, 13.v.1977, (no collector), 1 m (MAPA); Morro Reuter, 26.ix.1983, A. Moser leg., 2 m (CLAM); Erechim, 08.xi.1985, Mielke & Casagrande leg., 2 m (DZUP); Morro Reuter, 20.x.2001, A. Moser leg., 1 m (CLAM).

***Arsenura xanthopus* (Walker, 1855) – Fig. 7.**

*Rhescyntis (Arsenura) xanthopus*; Biezanko (1986)

Forewing length - f: 67.2mm [according to illustration by Lemaire (1980)]; m (6): 63.3mm ± 0.5mm.

Host family: Malvaceae.

Flight period: January, February, September, October and December.

Material examined. Porto Alegre, (no date), (no collector), 1 f (MNRJ); Porto Alegre, (no date), (no collector), 1 m (MNRJ); Santa Maria, 02.xii.1970, D. Link leg., 1 m (MECB); Santa Cruz do Sul, 26.ix.1971, D. Schöninger leg., 1 m (MECB); Santa Maria, 12.x.1971, Sidnei leg., 1 m (MECB); Pelotas, 30.x.1976, J. Paiz leg., 1 m (MECB); Morro Reuter, 25.ix.1982, A. Moser leg., 1 m (CLAM); Bento Gonçalves, 17.x.1985, L. Juruema leg., 1 m (MRCC); Bento Gonçalves, 17.x.1985, L. Juruema leg., 1 m (MRCC); Salvador do Sul, 07.ii.1998, A. Specht leg., 1 m (MCTP); Piratini, 07.x.1999, A. Specht leg., 1 m (MCTP); Morro Reuter, 11.x.1999, A. Moser leg., 1 m (CLAM); Morro Reuter, 8–9.x.2004, A. Moser, 1 m (CLAM); Morro Reuter, 17–19.i.2005, A. Moser leg., 1 m (CLAM).

***Caio romulus* (Maassen, 1869) – Fig. 8.**

Nunes *et al.* (2003)

Forewing length - f: 89.1mm [according to illustration by Lemaire (1980)]; m (1): 83.5mm.

Flight period: October.

Material examined. São Francisco de Paula, 11.x.1996, A. Specht leg., 1 m (MCTP 7713); Maquine, 10.x.2004, Quadros & Moser leg., 1 m (CLAM); São Francisco de Paula, 24–25.x.2005, A. Moser leg., 1 m (CLAM).

***Dysdaemonia brasiliensis* W. Rothschild, 1906 – Fig. 9.**

As *Dysdaemonia boreas* (Cramer) \* misidentification; Biezanko (1986) (see discussion below).

Forewing length - f: 62.6mm [according to illustration by Lemaire (1980)]; m (2): 65.1 ± 0.2mm.

Flight period: January and February.

Material examined. Pelotas, 12.i.1970, J. Ferro leg., 1 m (MECB); Derrubadas, 24.i.2001, R. Di Mare leg., 2 m (MCTP); Derrubadas,



1–6.ii.09, Moser leg., 2 m (CLAM).

\**Titaea tamerlan tamerlan* (Maassen, 1869) – Fig. 10.

Forewing length - f: 90.5mm [according to illustration by Lemaire (1980)]; m: 78.9mm.

Flight period: February.

Host family: Malvaceae.

Material examined. São Francisco de Paula, 23.ii.1998, A. Specht leg., 1 m (MCTP).

*Paradaemonia meridionalis* A. J. A. Camargo, Mielke & Casagrande, 2007 - Fig. 11.

A. J. A. Camargo, Mielke & Casagrande (2007)

Forewing length - f: 74–79mm [according to A. J. A. Camargo *et al.* (2007)]; m (2):  $67.6 \pm 2.4$ mm.

Flight period: January and February.

Material examined. São Francisco de Paula, i.1955, L. E. Backup leg., 1 m (MCNZ); Barracão, 21.ii.2001, R. Di Mare leg., 1 m (MCTP); São Francisco de Paula, 24.i.2006, A. Moser leg., 1 m (CLAM); São Francisco de Paula, 24.i.2006, A. Moser leg., 1 m (MCTP).

*Paradaemonia thelia* (Jordan, 1922) – Fig. 12.

Biezanko & Baucke (1948); Lemaire (1980)

*Dysdaemonia thelia*; Draudt (1929–30)

*Rhescyntis (Paradaemonia) wagneri*; Biezanko (1986)

Forewing length - f (1): 67.3mm; m (19):  $58.7 \pm 0.6$ mm.

Flight period: February to April, June, and

September to November.

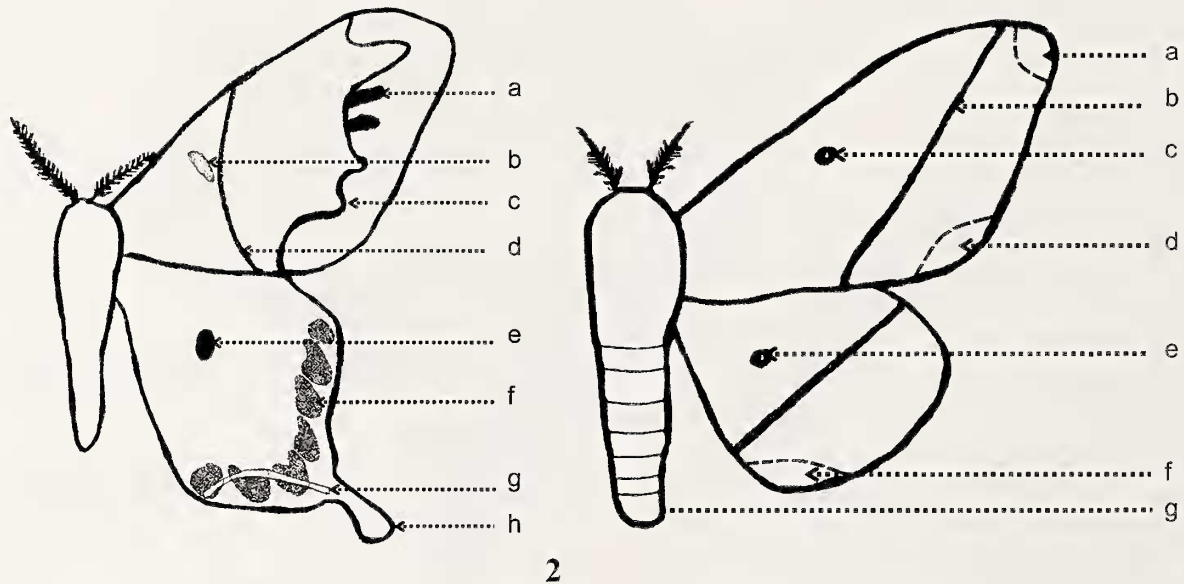
Material examined. São Lourenço do Sul, (no date), (no collector), 1 m (MNRJ); Santa Maria, 1925, (no collector), 1 m (MCNZ); São Leopoldo, x.1932, (no collector), 1 m (MAPA); Pareci Novo, 15.x.1936, (no collector), 1 m (MAPA); Pelotas, 13.ii.1942, Irmãs Figueiredo leg., 1 m (MUCP); Pelotas, 23.iii.1944, Irmãs Figueiredo leg., 1 m (MUCP); Pelotas, xi.1944, Irmãs Figueiredo leg., 1 m (MUCP); Porto Alegre, 30.x.1946, M. Faesch leg., 1 m (MECB); Porto Alegre, 16.x.1958, E. Corseuil leg., 1 m (FASE); Porto Alegre, 08.x.1966, (no collector), 1 m (MAPA); Porto Alegre, 06.iii.1967, (no collector), 1 m (MAPA); Santa Maria, 07.vi.1968, J. Mantovani leg., 1 m (MECB); Porto Alegre, 03.x.1969, Stoffel leg., 1 f (MAPA); Porto Alegre, 10.x.1969, Stoffel leg., 1 m (MAPA); Santa Maria, 09.x.1971, C. Rizzato leg., 1 m (MECB); Santa Maria, 14.x.1971, A. Aita leg., 1 m (MECB); Porto Alegre, 15.vi.1974, Mello leg., 1 m (MAPA); Porto Alegre, 13.x.1977, E. Borsa leg., 1 m (MCNZ); Pelotas, 04.x.1978, M. Rodrigues leg., 1 m (MECB); Pelotas, 16.x.1980, M. Romilda leg., 1 m (MECB); Pelotas, 13.iv.1981, A. Lanz leg., 1 m (MECB); São Jerônimo, 10.ix.1982, T. Arigony leg., 1 m (MCNZ); São Jerônimo, 20.ix.1982, H. A. Gastal leg., 1 m (MCNZ); São Jerônimo, 23.ix.1982, H. A. Gastal leg., 1 m (MCNZ); Morro Reuter, 25.ix.1982, A. Moser leg., 1 m (CLAM); São Jerônimo, 01.x.1982, C. J. Becker leg., 1 m (MCNZ); São Jerônimo, 11.x.1982, C. J. Becker leg., 1 m (MCNZ); São Jerônimo, 13.x.1982, H. A. Gastal leg., 1 m (MCNZ); Pelotas, 01.iii.1983, Jacira leg., 1 m (MECB); Porto Alegre, 04.xi.1992, P. R. Rambo leg., 1 m (MCTP); Cachoeira do Sul, 21.ix.1998, A. Specht leg., 1 m (MCTP); Alegrete, 23.xi.2000, R. Di Mare leg., 1 m (MCTP); Alegrete, 24.xi.2000, R. Di Mare leg., 1 m (MCTP).

\**Rhescyntis pseudomartii* Lemaire, 1976 – Fig. 13.

Forewing length - f: 81.7mm [according to illustration by Lemaire (1980)]; m: 85.7mm.

Flight period: April.

Material examined. São Francisco de Paula, 19.iv.2004, F. Nunes leg., 1 m (MCTP).



FIGS. 2–3. Some morphological aspects used in the dichotomous keys. **2.** Arsenurinae. **a)** submarginal black spot between M1 and M2; **b)** forewing discal spot; **c)** convexities between M3–CuA2 on the submarginal band; **d)** hindwing discal spot; **e)** clear intervenous mark on the submarginal region; **f)** concave line on the anal angle to wing prolongation; **g)** hindwing prolongation. **3.** Ceratocampinae. **a)** apex; **b)** distal band; **c)** forewing subcircular discal spot; **d)** forewing tornus; **e)** hindwing subcircular discal spot; **f)** hindwing tornus; **g)** abdomen.



FIGS. 4–15. Figs. 4–9. Arsenurinae of Rio Grande do Sul, Brazil (male dorsal view). 4. *Arsenura armida*. 5. *Arsenura biundulata*. 6. *Arsenura orbygniana*. 7. *Arsenura xanthopus*. 8. *Caio romulus*. 9. *Dysdaemonia brasiliensis*. Figs. 10–15. Arsenurinae of Rio Grande do Sul, Brazil (male dorsal view). 10. *Titaea tamerlan tamerlan*. 11. *Paradaemonia meridionalis*. 12. *Paradaemonia thelia*. 13. *Rhescyrtis pseudomartii*. 14. *Copiopteryx southonaxi*. 15. *Copiopteryx derceto*.



FIGS. 16–26. Ceratocampinae of Rio Grande do Sul, Brazil (male dorsal view). 16. *Eacles imperialis magnifica*. 17. *Eacles ducalis*. 18. *Eacles mayi*. 19. *Eacles bertrandi*. 20. *Citheronia brissotii brissotii*. 21. *Citheronia johnsoni* (cf. D'Abreira 1995). 22. *Citheronia laocoon*. 23. *Citheronia vogleri* (cf. D'Abreira 1995). 24. *Procitheronia purpurea*. 25. *Othorene cadmus*. 26. *Othorene purpurascens*.



***Copiopteryx southonaxi* É. André, 1905** – Fig. 14.  
Biezanko (1986)

Forewing length - f (1): 53.5mm; m (17): 49.7 ± 0.3mm.

Host family: Lauraceae.

Flight period: every month except May and December.

Material examined. Osório, (no date), (no collector), 1 m (MCNZ); Lajeado, 14.viii.1900, Mabilde leg., 1 m (MCNZ); Porto Alegre, 05.ix.1928, (no collector), 1 m (MAPA); Taquara, 03.ii.1929, A. Baumann leg., 1 m (DZUP); Pareci Novo, 16.vii.1933, (no collector), 1 m (MAPA); Porto Alegre, 19.iii.1939, (no collector), 1 m (MAPA); São Leopoldo, x.1940, (no collector), 1 f (MAPA); São Leopoldo, x.1940, (no collector), 1 m (MAPA); Bento Gonçalves, iii.1954, J. Steiger leg., 1 m (MCNZ); Porto Alegre, 20.viii.1957, J. Azerolo leg., 1 m (FASE); Porto Alegre, 23.vii.1962, (no collector), 1 m (FASE); Porto Alegre, 27.x.1969, A. Gentili leg., 1 m (DZUP); Porto Alegre, 17.ix.1980, L. Ramos leg., 1 m (FASE); Morro Reuter, 28.X.1982, A. Moser leg., 1 m (CLAM); Pelotas, vi.1986, P. Peterle leg., 1 m (MECB); São Pedro do Sul, 04.ix.1994, A. Specht leg., 1 m (MCTP); Salvador do Sul, 04.x.1995, A. Specht leg., 1 m (MCTP); Morro Reuter, 12–19.iv.1997, A. Moser leg., 1 m (CLAM); São Francisco de Paula, 20.xi.1998, A. Specht leg., 1 m (MCTP); São Francisco de Paula, 19.iii.2001, A. Specht leg., 1 m (MCTP); São Francisco de Paula, 20.iii.2004, F. G. Nunes leg., 1 m (MCTP); Pelotas, 20.i.2005, A. Moser leg., 1 m (CLAM).

***Copiopteryx derceto* (Maasen, [1872])** – Fig. 15.

Nunes *et al.* (2003)

Forewing length - f: 64.4mm [according to illustration by Lemaire (1980)]; m (4): 67.3 ± 2mm.

Flight period: January, March, and November.

Material examined. São Francisco de Paula, 06.i.1997, A. Specht leg., 1 m (MCTP); São Francisco de Paula, 07.i.1997, A. Specht leg., 1 m (MCTP); São Francisco de Paula, 20.xi.1998, A. Specht leg., 1 m (MCTP); São Francisco de Paula, 19.i.2001, R. Di Mare leg., 1 m (MCTP); Maquine, 6–7.iii.2005, A. Moser leg., 1 m (CLAM).

**Ceratocampinae Harris, 1841**

***Eacles imperialis magnifica* Walker, 1855** – Fig. 16.

Costa Lima (1936); Biezanko; Baucke (1948);

Biezanko *et al.* (1949); Silva *et al.* (1968);

Nunes *et al.* (2003)

*Eacles magnifica*; Mabilde (1896); Ronna (1923);

Ronna (1933)

Forewing length - f (14): 60.1 ± 2.3mm; m (34): 53.3 ± 0.4mm.

Host families: Anacardiaceae, Betulaceae, Burseraceae, Caprifoliaceae, Cochlospermaceae, Combretaceae, Cupressaceae, Ebenaceae, Euphorbiaceae, Fabaceae: Caesalpinioideae, Fabaceae: Faboideae, Fagaceae, Hamamelidaceae, Juglandaceae, Lauraceae, Malvaceae, Moraceae, Myricaceae, Myrtaceae, Oleaceae, Pinaceae, Platanaceae, Rosaceae, Rubiaceae, Salicaceae, Sapindaceae, Ulmaceae.

Flight period: every month except June and July.

Material examined. Cerro Largo, (no date), (no collector), 3 m (MAPA); São Francisco de Paula, (no date), (no collector), 2 f (MAPA); Estrela, ix.1919, (no collector), 1 m (MAPA); Estrela, 20.ix.1919, (no collector), 1 m (MAPA); Estrela, 24.ix.1919, (no collector), 1 f (MAPA); Estrela, 02.xii.1919, (no collector), 1 f (MAPA); Estrela, 15.xii.1919, (no collector), 1 f (MAPA); Porto Alegre, 11.ix.1929, (no collector), 1 m (MAPA); Pareci Novo, 05.ix.1933, (no collector), 1 m (MAPA); Pareci Novo, 02.x.1936, (no collector), 1 f (MAPA); Pelotas, 22.ii.1939, I. Figueiredo leg., 1 m (MUCP); Pelotas, 24.ii.1939, I. Figueiredo leg., 1 f (MUCP); São Leopoldo, v.1940, (no collector), 1 m (MAPA); Porto Alegre, 18.ix.1940, (no collector), 1 m (MAPA); São Francisco de Paula, 31.i.1941, (no collector), 1 m (MAPA); Pelotas, xi.1942, I. Figueiredo leg., 1 f (MUCP); Porto Alegre, 27.ii.1943, R.G. Costa leg., 1 m (MRCC); Pelotas, 16.x.1944, I. Figueiredo leg., 1 m (MUCP); Pelotas, 15.iii.1945, I. Figueiredo leg., 1 f (MUCP); Porto Alegre, 1946, (no collector), 1 m (MAPA); Pareci Novo, 21.viii.1946, (no collector), 1 f (MAPA); Pelotas, 23.ix.1946, C. Biezanko leg., 1 m (MECB); Pelotas, 30.x.1946, C. Biezanko leg., 2 m (MECB); Pelotas, 31.x.1946, C. Biezanko leg., 1 m (MECB); Pelotas, 25.ii.1948, I. Figueiredo leg., 1 m (MUCP); Pelotas, 06.iii.1950, I. Figueiredo leg., 1 m (MUCP); Porto Alegre, 19.x.1951, D.C. Radaelli leg., 1 f (MRCC); Montenegro, 07.ii.1953, O. Baucke leg., 1 m (MRCC); Montenegro, 07.ii.1953, O. Baucke leg., 2 f (MRCC); Santa Maria, 15.iii.1956, O.R. Camargo leg., 1 m (MRCC); Porto Alegre, 17.iii.1958, E. Corseuil leg., 1 m (FASE); Porto Alegre, 17.iii.1958, E. Corseuil leg., 1 m (FASE); Porto Alegre, 17.iii.1958, E. Corseuil leg., 1 m (FASE); Porto Alegre, 11.v.1960, C. Barrada leg., 1 m (FASE); Porto Alegre, 20.x.1965, L. Wisse leg., 1 m (FASE); Porto Alegre, 24.viii.1972, C. Trois leg., 1 m (FASE); Porto Alegre, 15.viii.1978, Valdir leg., 1 f (FASE); Taquara, 12.ix.1980, J. Müller leg., 1 f (FASE); Morro Reuter, 25.ix.1982, A. Moser leg., 1 m (CLAM); Cassino, 31.i.1988, (no collector), 1 m (MCNZ); Morro Reuter, 24.x.1992, A. Moser leg., 1 m (CLAM); Salvador do Sul, 03.iv.1994, A. Specht leg., 1 m (MCTP); Salvador do Sul, 13.viii.1994, A. Specht leg., 1 m (MCTP); Morro Reuter, 08.x.1994, A. Moser leg., 1 m (CLAM); Morro Reuter, 24.ii.1996, A. Moser leg., 1 f (CLAM); São Francisco de Paula, 11.x.1996, A. Specht leg., 1 f (MCTP); Encruzilhada do Sul, 02–03.xi.2000, A. Moser leg., 1 m (CLAM); Derrubadas, 24.i.2001, R. A. Di Mare leg., 1 m (MCTP); São Francisco de Paula, 20.iii.2004, F. G. Nunes leg., 2 m (MCTP).

***Eacles ducalis* (Walker, 1855)** – Fig. 17.

Nunes *et al.* (2003)

Forewing length - f (1): 65mm; m (35): 53.5 ± 0.5mm.

Host families: Anacardiaceae, Fagaceae, Juglandaceae, Loranthaceae, Malvaceae, Melastomataceae, Oleaceae, Poaceae.

Flight period: January to March and July to October.

Material examined. Pareci Novo, vii.1932, (no collector), 1 m (MAPA); Pareci Novo, 15.x.1939, (no collector), 1 f (MAPA); São Francisco de Paula, 21.i.1941, (no collector), 1 m (MAPA); São Francisco de Paula, 05.ii.1941, (no collector), 1 m (MAPA); Porto Alegre, 10.x.1947, (no collector), 1 m (MAPA); Lajeado, 12.viii.1948, R.G. Costa leg., 1 m (MRCC); Canela, 13.i.1955, O. Baucke leg., 2 m (MRCC); Porto Alegre, 17.iii.1958, E. Corseuil leg., 1 m (FASE); Porto Alegre, 14.x.1958, E. Corseuil leg., 1 m (FASE); Porto Alegre, 11.vii.1960, E. Corseuil leg., 1 m (FASE); Porto Alegre, 12.x.1961, K. Zimmermann leg., 1 m (FASE – 621); Pelotas, 23.i.1965, Illegible leg., 1 m (MECB); Viamão, 06.iii.1965, R. S. Crillo leg., 1 m (FASE); Porto Alegre, 11.vii.1966, (no collector), 1 m (MAPA); Porto Alegre, 20.viii.1967, Rópero leg., 1 m (FASE); Viamão, 10–15.ix.1972, T. M. Pereira leg., 1 m (FASE); Porto Alegre, 11.ix.1972, C. Trois leg., 1 m (FASE); Porto Alegre, 25.viii.1975, Voigt leg., 1 m (FASE); Porto Alegre, 12.ix.1977, Bianchin leg., 1 m (FASE); Salvador do Sul, 08.x.1994, A. Specht leg., 1 m (MCTP); Morro Reuter, 19.ii.1996, A. Moser leg., 1 m (CLAM); Morro Reuter, 03.i.1998, A. Moser leg., 1 m (CLAM); Camaquã, 20.viii.1998, A. Specht leg., 1 m (MCTP); Piratini, 14.i.1999, A. Specht leg., 1 m

(MCTP); São Francisco de Paula, 11.ii.1999, A. Specht leg., 1 m (MCTP); Morro Reuter, 29.vii.1999, A. Moser leg., 1 m (CLAM); Piratini, 11.ix.1999, A. Specht leg., 2 m (MCTP); Piratini, 07.x.1999, A. Specht leg., 3 m (MCTP); Encruzilhada do Sul, 02–03.i.2000, A. Moser leg., 1 m (CLAM); Morro Reuter, 18.viii.2001, A. Moser leg., 1 m (CLAM); São Francisco de Paula, 20.iii.2004, F. G. Nunes leg., 2 m (MCTP); Encruzilhada do Sul, 4–6.ix.2004, A. Moser leg., 1 m (CLAM).

***Eacles mayi* Schaus, 1920 – Fig. 18.**

Forewing length - f: 98–114mm [wingspan according to Lemaire (1988)]; m (3): 39.5 ± 0.4mm.

Flight period: January, September, October and November.

Material examined. São Francisco de Paula, 21.i.1942, (no collector), 1 m (MAPA); Porto Alegre, 14.xi.1960, A. Baumann leg., 1 f (DZUP); São Francisco de Paula 11.x.1996, A. Specht leg., 1 m (MCTP); São Francisco de Paula 10.ix.1999, A. Specht leg., 1 m (MCTP).

***Eacles bertrandi* Lemaire, 1981 – Fig. 19.**

Forewing length - m (2): 37 ± 1.6mm.

Flight period: January and February.

Material examined. São Francisco de Paula 23.ii.1998, A. Specht leg., 1 m (MCTP); São Francisco de Paula, 18.i.2005, A. Prestes leg., 1 m (MCTP); Camará do Sul, 1–4.i.2006, C. Mielke leg., 4 m (CLAM).

***Citheronia brissotii brissotii* (Boisduval, 1868) – Fig. 20.**

Nunes *et al.* (2003)

Forewing length - f (8): 55.5 ± 1.9mm; m (22): 46.9 ± 0.6mm.

Hostfamilies: Aquifoliaceae, Euphorbiaceae, Juglandaceae, Oleaceae, Rosaceae.

Flight period: every month except March, May, and June.

Material examined. Porto Alegre, x.1904, (no collector), 1 f (MAPA); Porto Alegre, 03.x.1930, (no collector), 1 f (MAPA); Porto Alegre, 20.ix.1933, (no collector), 1 m (MAPA); Pelotas, 10.xi.1941, I. Figueiredo leg., 1 m (CAMB); Pelotas, 25.ix.1944, I. Figueiredo leg., 1 m (MUCP); Pelotas, 16.x.1944, I. Figueiredo leg., 1 f (MUCP); Pelotas, 10.ii.1945, I. Figueiredo leg., 1 m (MUCP); São Sebastião do Caí, 28.iv.1945, A. Paiva-Neto leg., 1 f (MRGC); Pelotas, iv.1947, E. Poetsch leg., 1 m (MECB); Pelotas, 21.viii.1947, I. Figueiredo leg., 1 m (MUCP); Canoas, 13.viii.1949, (no collector), 1 f (MCNZ); Canela, 13.i.1955, O. Baucke leg., 1 m (MRGC); Porto Alegre, 1956, J. Sousa leg., 1 f (FASE); Porto Alegre, 22.ix.1959, C. Seherer leg., 1 m (FASE); Porto Alegre, 11.vii.1960, (no collector), 1 m (MAPA); Porto Alegre, viii.1962, C. Trois leg., 1 m (FASE); Porto Alegre, 05.ix.1962, M. Barreto leg., 1 m (FASE); Rio Grande, 05.x.1962, (no collector), 1 m (FASE); Rio Grande, 10.x.1962, (no collector), 1 m (MECB); Lajeado, 28.i.1980, Nilde leg., 1 m (MECB); São Jerônimo, 26.viii.1982, (no collector), 1 m (MCNZ); São Jerônimo, 07.ix.1982, (no collector), 1 m (MCNZ); Rio Grande, 15.x.1985, C. J. Beeker leg., 1 f (MCNZ); Rio Grande, 16.xi.1985, H. A. Gastal leg., 1 m (MCNZ); Rio Grande, 04.xi.1986, A. A. Lise leg., 1 m (MCNZ); Salvador do Sul, 08.x.1994, A. Specht leg., 1 m (MCTP); Venâncio Aires, 13.xii.1995, (no collector), 1 f (MCTP); São Francisco de Paula, 20.xi.1996, A. Specht leg., 1 m (MCTP); São Francisco de Paula, 23.ii.1998, A. Specht leg., 1 m (MCTP); São Francisco de Paula, 11.ix.1998, A.

Specht leg., 1 m (MCTP); Cachoeira do Sul, 21.ix.1998, A. Specht leg., 1 m (MCTP); Camaquã, 19.x.1998, A. Specht leg., 1 m (MCTP); Morro Reuter, 20.ix.1999, A. Moser leg., 1 m (CLAM); Piratini, 07.x.1999, A. Specht leg., 2 m (MCTP); Encruzilhada do Sul, 02–03.i.2000, A. Moser leg., 1 m (CLAM); Sarandi, 26.i.2001, R. A. Di Mare leg., 1 m (MCTP); Encruzilhada do Sul, 4–6.ix.2004, A. Moser leg., 1 m (CLAM).

***Citheronia johnsoni* Schaus, 1928 – Fig. 21.**

Draudt (1929–1930); Lemaire (1988); D'Abbrera (1995); Lemaire (1996)

Forewing length - f: 108–115mm [wingspan according to Lemaire (1988)]; m: 67–84mm [wingspan according to Lemaire (1988)].

Flight period: November and December.

Material examined. Porto Alegre, 17.xi.1934, Baumann leg., 1 f (MNRJ); Porto Alegre, 02.xii.1954, Baumann leg., 1 f (MNRJ).

***Citheronia laocoon* (Cramer, 1777) – Fig. 22.**

Lemaire (1988)

*Citheronia cacicus*; Mabilde (1896)

*Eacles cassicus*; Ronna (1933)

*Citheronia laocoon laocoon*; Silva *et al.* (1968)

*Citheronia* (*Citheronia*) *laocoon*; Biezanko (1986)

Forewing length - f (2): 56.6 ± 0.1 mm; m (1): 46.2mm.

Host families: Anacardiaceae, Aquifoliaceae, Asteraceae, Caryocaraceae, Combretaceae, Cucurbitaceae, Cupressaceae, Ebenaceae, Euphorbiaceae, Malvaceae, Myrtaceae, Rosaceae.

Flight period: January, February, October and November.

Material examined. Porto Alegre, (no date), (no collector), 1 f (MZSP); Cerro Largo, i.1931, (no collector), 1 f (MAPA); Charqueadas, ii.1948, (no collector), 1 m (MAPA); Porto Alegre, 21.x.1961, A. Gentili leg., 1 m (DZUP); Porto Alegre, 31.i.1965, (no collector), 1 f (MAPA); Porto Alegre, 29.x.1965, A. Gentili leg., 1 f (DZUP); Porto Alegre, 05.xi.1967, A. Gentili leg., 1 m (DZUP); Porto Alegre, 23.xi.1970, A. Baumann leg., 1 m (DZUP); Viamão, 03.xi.1971, A. Gentili leg., 1 m (DZUP); Pelotas, 18.i.1977, Niemaber leg., 1 m (MECB); Morro Reuter, 12.ii.1983, 1 f (CLAM).

***Citheronia vogleri* (Weyenbergh, 1881) – Fig. 23.**

Biezanko; Baucke (1948); Biezanko *et al.* (1949);

Silva *et al.* (1968)

Forewing length - f: 103–116mm [wingspan according to Lemaire (1988)]; m: 103–118mm [wingspan according to Lemaire (1988)].

Host families: Anacardiaceae, Loranthaceae, Myrtaceae.

Flight period: February, October and December.

Material examined. Pelotas, 29.x.1939, Irmãs Figueiredo leg., 1 f (MUCP); Pelotas, x.1945, (no collector), 1 f (DZUP); Pelotas, 22.xii.1945, Irmãs Figueiredo leg., 1 f (DZUP); Pelotas, 12.ii.1940, Irmãs Figueiredo leg., 1 f (MUCP).



***Procitheronia purpurea* (Oiticica, 1942) – Fig. 24.**Nunes *et al.* (2003)*Citheronia* (*Procitheronia*) *principalis purpurea*;  
Biezanko (1986)

Forewing length - f: 124–128mm [wingspan according to Lemaire (1988)]; m (1): 57.7mm.

Flight period: November.

Material examined. São Francisco de Paula, 20.xi.1998, A. Specht leg., 1 m (MCTP).

***Othorene cadmus* (Herrich-Schäffer, [1854]) – Fig. 25.***Adelocephala* (*Adelocephala*) *cadmus*; Biezanko (1986)

Forewing length - f: 130mm [wingspan according to Lemaire (1988)]; m: 95–112mm [wingspan according to Lemaire (1988)]. (see discussion below).

***Othorene purpurascens* (Schaus, 1905) – Fig. 26.**Nunes *et al.* (2003)*Adelocephala* (*Oiticicia*) *purpurascens*; Biezanko (1986)

Forewing length - f (1): 50.3mm; m (8): 38.3 ± 0.7mm.

Host families: Combretaceae, Myrtaceae, Sapotaceae.

Flight period: January, February, September and October.

Material examined. Canela, 13.i.1955, E. Corseuil leg., 1 m (MRGC); São Francisco de Paula, 07.i.1997, J. Teston leg., 1 m (MCTP); São Francisco de Paula, 10.i.1997, J. Teston leg., 1 m (MCTP); São Francisco de Paula, 12.ii.1999, J. Teston leg., 1 f (MCTP); Encruzilhada do Sul, 02–03.ii.2000, A. Moser leg., 1 m (CLAM); Barracão, 21.ii.2000, R. A. Di Mare leg., 1 m (MCTP); Encruzilhada do Sul, 04–06.ix.2004, A. Moser leg., 2 m (CLAM); São Francisco de Paula, 12–14.x.2004, Moser, Nunes &amp; Prestes leg., 1 m (CLAM); São Francisco de Paula, 20–22.x.2006, F. Quadros leg., 1 m (MCTP).

***Cicia crocata* (Boisduval, 1872) – Fig. 27.***Adelocephala* (*Oiticicia*) *crocata*; Biezanko (1986)

Forewing length - f: 40–53mm [wingspan according to Lemaire (1988)]; m: 34–42mm [wingspan according to Lemaire (1988)]. (see discussion below).

Host family: Fabaceae: Caesalpinioideae.

***Cicia nettia* (Schaus, 1921) – Fig. 28.***Adelocephala* (*Oiticicia*) *nettia*; Biezanko (1986)

Forewing length - f: 67mm [wingspan according to Lemaire (1988)]; m: 47–52mm [wingspan according to Lemaire (1988)].

Flight period: September and November.

Material examined. Guarani das Missões, 05.xi.1932, C. Biezanko leg., 1 m (MECB); Guarani das Missões, 20.ix.1933, C. Biezanko leg., 1 m (MECB).

***Almeidella approximans* (Schaus, 1921) – Fig. 29.**Biezanko (1986); Nunes *et al.* (2003)

Forewing length - f: 68–82mm [wingspan according to Lemaire (1988)]; m (3): 33.2 ± 0.5mm.

Flight period: October.

Material examined. São Francisco de Paula, 08.x.1999, A. Specht leg., 1 m (MCTP); São Francisco de Paula, 08.x.1999, A. Specht leg., 1 m (MCTP); São Francisco de Paula, 08.x.1999, A. Specht leg., 1 m (MCTP); São Francisco de Paula, 12–14.x.2004, Nunes, Prestes &amp; Moser leg., 1 m (CLAM).

***Almeidella corrupta* (Schaus, 1913) – Fig. 30.**

Biezanko (1986)

Forewing length - f: 84–88mm [wingspan according to Lemaire (1988)]; m (1): 33.9mm.

Flight period: October.

Material examined. Morro Reuter, 08.x.1994, A. Moser leg., 1 m (CLAM); Morro Reuter, 10–14.x.2005, A. Moser leg., 1 f (CLAM); Morro Reuter, 5–6.x.2007, A. Moser leg., 1 f (CLAM).

**\**Mielkesia paranaensis* (Rego-Barros & Mielke, 1968) – Fig. 31.**

Forewing length - m (1): 26.4mm.

Flight period: September.

Material examined. Piratini, 11.ix.1999, A. Specht leg., 1 m (MCTP).

***Psilopygida crispula* (Dognin, 1905) – Fig. 32.**

Biezanko (1986)

Forewing length - f: 42–55mm [wingspan according to Lemaire (1988)]; m: 31–43mm [wingspan according to Lemaire (1988)]. (see discussion below).

Host family: Fabaceae: Caesalpinioideae, Fabaceae: Mimosoideae.

***Psilopygida walkeri* (Grote, 1867) – Fig. 33.***Adelocephala rosea*; Mabilde (1896); Mielke & Casagrande (1990)*Sysspinx apollinairei*; Draudt (1929–1930)*Adelocephala walkeri*; Travassos & May (1943)*Adelocephala* (*Oiticicia*) *walkeri rosea*; Biezanko (1986)

Forewing length - f (6): 31.4 ± 0.5mm; m (3): 25.6 ± 0.2mm.

Flight period: January to April, June, November and December.

Material examined. Pareci Novo, 30.vi.1932, (no collector), 1 m (MAPA); Pareci Novo, 24.xi.1932, (no collector), 1 f (MAPA); Pelotas, 15.xii.1938, I. Figueiredo leg., 1 f (MUCP); Pelotas, 02.ii.1941, I. Figueiredo leg., 1 f (MUCP); Pelotas, iv.1944, C. Biezanko leg., 1 m (MECB); Porto Alegre, 27.iii.1958, R. G. Costa leg., 1 m (FASE); Canoas, 28.ii.1959, E.R. Netto leg., 1 f (MRGC); Pelotas, 29.i.1960, C. Biezanko, 1 m (MECB); Porto Alegre, 19.iii.1960, (no collector), 1 f (MAPA); Pelotas, 21.iii.1963, C. Biezanko leg., 1 f (MECB); Porto Alegre, 16.i.1967, J. Mendicelli leg., 1 f (FASE); Pelotas, 16.iii.1969, C. Brack leg., C. Biezanko, 1 m (MECB); Porto Alegre, 17.iii.1971,

(no collector), 1 f (MAPA); Salvador do Sul, i.1995, A. Specht leg., 1 f (MCTP); Torres 13.iii.2000, A. Parise leg., 1 m (MCTP); Maquiné, 13–14.i.2005, A. Moser leg., 1 m (CLAM).

***Syssphinx molina* (Cramer, 1780) – Fig. 34.**

Ronna (1933); Costa Lima (1936); Biezanko *et al.* (1949); Biezanko (1986); Lemaire (1988)

*Syssphinx molina*; Mabilde (1896); Silva *et al.* (1968)

Forewing length - f (3): 49.8 ± 3mm; m (14): 38.2 ± 0.6mm.

Host families: Anacardiaceae, Ebenaceae, Fabaceae: Caesalpinioideae, Fabaceae: Faboideae, Fabaceae: Mimosoideae, Moraceae, Salicaceae.

Flight period: January to March, May, and September to November.

Material examined. Pelotas, 30.xi.1932, C. Biezanko leg., 1 m (MECB); Porto Alegre, 11.x.1934, (no collector), 1 m (MAPA); Pelotas, 19.ix.1939, I. Figueiredo leg., 1 m (MUCP); Taquari, ii.1941, R. Paim leg., 2 m (MRGC); Porto Alegre, 22.iii.1941, (no collector), 1 m (MAPA); Pelotas, 13.ii.1942, I. Figueiredo leg., 1 f (MUCP); Porto Alegre, 22.ii.1945, C. Machado leg., R.G. Costa, 1 m (MRGC); Porto Alegre, 13.v.1948, M. Jorge leg., J.M. Botelho, 1 f (MRGC); Pelotas, 25.x.1952, C. Biezanko leg., 1 m (MECB); Pelotas, 11.xi.1952, C. Biezanko leg., 1 m (MECB); Bento Gonçalves, ii.1954, J. Steiger leg., 1 f (MCNZ); Montenegro, 17.iii.1956, O. Baucke leg., 2 m (MRGC); Nova Petrópolis, 02.ii.1961, (no collector), 1 m (MCNZ); Nova Petrópolis, 17.ii.1964, (no collector), 1 f (MCNZ); Pelotas, 16.iii.1968, Illegible leg., 1 m (MECB); Santa Maria, 30.x.1971, J. Vasconcelos leg., 1 m (MECB); São Jerônimo, 24.ix.1982, T. Arigony leg., 1 m (MCNZ); Morro Reuter, 24.x.1992, A. Moser leg., 1 m (CLAM); Derrubadas, 24.i.2001, R. A. Di Mare leg., 3 m (MCTP); Morro Reuter, 20.x.2001, A. Moser leg., 1 m (CLAM); Pelotas, 20.i.2005, A. Moser leg., 1 m (CLAM); Morro Reuter, 5–7.ii.2005, A. Moser leg., 1 m (CLAM); Maquiné, 6–7.iii.2005, A. Moser leg., 1 m (CLAM).

***Adeloneivaia subangulata subangulata* (Herrich-Schäffer, [1855]) – Fig. 35.**

*Adelocephala subangulata*; Weymer (1894); Mabilde (1896); Ronna (1933)

*Syssphinx subangulata*; Costa Lima (1936); Silva *et al.* (1968)

Forewing length - f: 67–84mm [wingspan according to Lemaire (1988)]; m (23): 28.2 ± 0.3mm.

Host families: Moraceae, Salicaceae.

Flight period: January to March and September to December.

Material examined. Bento Gonçalves, ii.1954, J. Steiger leg., 1 m (MCNZ); São Sebastião do Caí, 17.iii.1956, O. Baucke leg., 1 m (MRGC); São Jerônimo, 24.ix.1982, (no collector), 1 m (MCNZ); São Jerônimo, 24.ix.1982, (no collector), 1 m (MCNZ); São Jerônimo, 22.x.1982, (no collector), 1 m (MCNZ); Morro Reuter, 30.x.1983, A. Moser leg., 1 m (CLAM); Morro Reuter, 24.x.1992, A. Moser leg., 1 m (CLAM); Salvador do Sul, 12.x.1993, A. Specht leg., 1 m (MCTP); Pelotas, 22.ii.1994, Victor Beeker leg., 1 m (MECB); Morro Reuter, 08.x.1994, A. Moser leg., 1 m (CLAM); Morro Reuter, 03.xi.1995, A. Moser leg., 1 m (CLAM); Morro Reuter, 24–28.xii.1996, A. Moser leg., 2 m (CLAM); Salvador do Sul, 01.i.1997, D. Becker leg., 1 m (MCTP); Iraí, 18.xii.1998, A. Specht leg., 1 m (MCTP); São Pedro da Serra, 19.ii.1999, A. Specht leg., 1 m (MCTP); Derrubadas, 14–18.i.2000, Moser & Araújo leg., 1 m (CLAM); Alegrete, 23.xi.2000, R. A. Di Mare leg., 1 m (MCTP); Derrubadas, 24.i.2001, R. A. Di

Mare leg., 2 m (MCTP); Barracão, 21.ii.2001, R. A. Di Mare leg., 4 m (MCTP); Morro Reuter, 1–4.iii.2005, A. Moser leg., 1 f (CLAM).

***Adeloneivaia catharina* (Bouvier, 1927) – Fig. 36.**

*Adeloneivaia apicalis*; Biezanko (1986)

Forewing length - f: 68–77mm [wingspan according to Lemaire (1988)]; m (8): 27 ± 0.3mm.

Flight period: January, April, May and October.

Material examined. Guarani das Missões, 17.x.1932, C. Biezanko leg., 1 m (MECB); Guarani das Missões, 19.x.1933, C. Biezanko leg., 1 m (MECB); Santa Maria, 25.x.1971, D. Link leg., 1 m (MECB); Santa Maria, 09.iv.1992, S. J. Bressan leg., 1 m (MECB); Morro Reuter, 18.i.1997, A. Moser leg., 1 m (CLAM); Derrubadas, 24.i.2001, R. A. Di Mare leg., 6 m (MCTP); Osório, 05.v.2001, A. Ferrari leg., 1 m (MCTP); Derrubadas, 14–18.i.2000, A. Moser leg., 1 m (CLAM).

***Adeloneivaia fallax* (Boisduval, 1872) – Fig. 37.**

Biezanko (1986); Lemaire (1988); Nunes *et al.* (2003)

Forewing length - f: 44.3mm; m (8): 33.6 ± 0.3mm.

Host family: Fabaceae: Mimosoideae.

Flight period: January to March, July, September to November.

Material examined. Guarani das Missões, 16.x.1933, C. Biezanko leg., 1 m (MECB); Nova Petrópolis, 02.i.1961, (no collector), 1 f (MCNZ); Nova Petrópolis, 07.ii.1961, (no collector), 1 m (MCNZ); Nova Petrópolis, 07.ii.1961, (no collector), 1 m (MCNZ); Morro Reuter, 28.vii.1982, A. Moser leg., 1 m (CLAM); Salvador do Sul, 07.ix.1995, A. Specht leg., 1 f (MCTP); Morro Reuter, 07–11.ii.1997, A. Moser leg., 1 m (CLAM); Camaquã, 19.x.1998, A. Specht leg., 1 m (MCTP); Barracão, 21.ii.2001, R. A. Di Mare leg., 1 m (MCTP); Morro Reuter, 17–20.ix.2004, A. Moser leg., 1 m (CLAM); São Francisco de Paula, 24–25.x.2005, A. Moser leg., 1 m (CLAM); Morro Reuter, 1–4.iii.2005, A. Moser leg., 1 f (CLAM); Morro Reuter, 12–15.xi.2005, A. Moser leg., 1 m (CLAM).

***Adelowalkeria flavosignata* (Walker, 1865) – Fig. 38.**

Biezanko (1986); Lemaire (1988)

Forewing length - f (4): 51.4 ± 0.4mm; m (7): 38.1 ± 0.7mm.

Host family: Fabaceae: Faboideae.

Flight period: January, February, and September to December.

Material examined. Caxias do Sul, 20.ii.1931, (no collector), 1 m (MCNZ); Pareci Novo, 25.ix.1932, (no collector), 1 f (MAPA); Porto Alegre, 01.xi.1953, L. Buckup leg., 1 m (MCNZ); Nova Petrópolis, 27.i.1961, (no collector), 1 m (MCNZ); Santa Maria, 28.ix.1971, Link leg., 1 m (MECB); Santa Maria, 28.x.1971, Bergmann leg., 1 m (MECB); Lajeado, 28.i.1980, Nilde leg., 1 m (MECB); Morro Reuter, 30.x.1983, A. Moser leg., 1 m (CLAM); Erechim, 08.xi.1985, Mielke & Casagrande leg., 1 f (DZUP); Morro Reuter, 19.ii.1996, A. Moser leg., 1 m (CLAM); Morro Reuter, 13–16.i.2002, A. Moser leg., 1 f (CLAM); Morro Reuter, 31.xii.2003–02.I.2004, A. Moser leg., 2 m (CLAM); Morro Reuter, 10.i.2004, A. Moser leg., 2 f (CLAM).

***Adelowalkeria tristygma* (Boisduval, 1872) – Fig. 39.**

Biezanko (1986); Lemaire (1988); Nunes *et al.* (2003)

Forewing length - f: 90–96mm [wingspan according to Lemaire (1988)]; m (8): 31.8 ± 1mm.



Flight period: January to March and July to November.

Material examined. Guarani das Missões, 03.iii.1932, C. Biezanko leg., 1 m (MECB); Guarani das Missões, 05.iii.1932, C. Biezanko leg., 1 m (MECB); Guarani das Missões, 14.iii.1932, C. Biezanko leg., 1 m (MECB); Guarani das Missões, 29.vii.1932, C. Biezanko leg., 1 m (MECB); Guarani das Missões, 18.x.1939, C. Biezanko leg., 1 f (MECB); Farroupilha, iii.1951, (no collector), 1 m (MECB); Guarani das Missões, 11.xi.1952, C. Biezanko leg., 1 m (MECB); Canela, 13.i.1955, E. Corseuil leg., 1 m (MRGC); Santa Maria, 23.viii.1971, J. Vasconcelos leg., C. Biezanko, 1 m (MECB); Santa Maria, 25.x.1971, D. Link leg., 1 m (MECB); Santa Maria, 28.x.1971, L. I. Traesel leg., 1 f (MECB); Morro Reuter, 08.x.1994, A. Moser leg., 2 m (CLAM); Morro Reuter, 07–11.ii.1997, A. Moser leg., 1 m (CLAM); São Francisco de Paula, 28.ii.1998, A. Specht leg., 1 m (MCTP); Barracão, 21.ii.2000, R. A. Di Mare leg., 2 m (MCTP); Encruzilhada do Sul, 04–06.ix.2004, A. Moser leg., 1 m (CLAM); São Francisco de Paula, 12–15.x.2007, F. Quadros leg., 1 m (MCTP).

***Scolesa totoma* (Schaus, 1900) – Fig. 40.**

Nunes *et al.* (2003)

Forewing length - f (5):  $30.5 \pm 0.5$ mm; m (18):  $23.8 \pm 0.4$ mm.

Flight period: every month except April, July, and December.

Material examined. Pelotas, 14.viii.1939, C. Biezanko leg., 1 m (MECB); Nova Petrópolis, 05.ii.1961, (no collector), 1 f (MCNZ); Nova Petrópolis, 06.ii.1961, (no collector), 1 m (MCNZ); Nova Petrópolis, 01.xi.1961, (no collector), 1 f (MCNZ); Nova Petrópolis, 15.xi.1961, (no collector), 1 m (MCNZ); Nova Petrópolis, 15.xi.1961, (no collector), 1 m (MCNZ); Morro Reuter, 08.i.1983, A. Moser leg., 1 m (CLAM); Morro Reuter, 15.v.1983, A. Moser leg., 1 m (CLAM); Morro Reuter, 30.x.1983, A. Moser leg., 1 m (CLAM); Morro Reuter, 09.ii.1991, A. Moser leg., 1 m (CLAM); Morro Reuter, 06.vi.1992, A. Moser leg., 1 m (CLAM); Morro Reuter, 24.x.1992, A. Moser leg., 1 m (CLAM); Morro Reuter, 08.x.1994, A. Moser leg., 1 m (CLAM); Salvador do Sul 21.i.1995, A. Specht leg., 1 m (MCTP); Morro Reuter, 19.ii.1996, A. Moser leg., 1 f (CLAM); Morro Reuter, 19.ii.1996, A. Moser leg., 2 m (CLAM); Morro Reuter, 07.iii.1998, A. Moser leg., 1 f (CLAM); Morro Reuter, 27.iii.1998, A. Moser leg., 1 m (CLAM); São Francisco de Paula, 11.ii.1999, A. Specht leg., 1 m (MCTP); São Francisco de Paula, 16.vi.1999, A. Specht leg., 1 m (MCTP); Barracão, 21.ii.2001, R. A. Di Mare leg., 1 f (MCTP); São José dos Ausentes, 02–04.ii.2002, A. Moser leg., 1 m (CLAM); Encruzilhada do Sul, 04–06.ix.2004, A. Moser leg., 1 m (CLAM); São Francisco de Paula, 12–15.x.2007, F. Quadros leg., 1 m (MCTP).



FIGS. 27–45. Ceratocampinae of Rio Grande do Sul, Brazil (male dorsal view). 27. *Cicia crocata*. 28. *Cicia nettia* (cf. D'Abbrera 1995). 29. *Almeidella approximans*. 30. *Almeidella corrupta*. 31. *Mielkesia paranaensis*. 32. *Psilopygida crispula* (cf. D'Abbrera 1995). 33. *Psilopygida walkeri*. 34. *Syssplinx molina*. 35. *Adeloneivaia subangulata subangulata*. 36. *Adeloneivaia catharina*. 37. *Adeloneivaia fallax*. 38. *Adelowalkeria flavosignata*. 39. *Adelowalkeria tristygna*. 40. *Scolesa viettei*. 42. *Scolesa hypoxantha* (cf. D'Abbrera 1995). 43. *Citioica anthonilis*. 44. *Oiticella luteicia*. 45. *Neocaruegia basirei*.

***Scolesa viettei* Travassos, 1959 – Fig. 41.**

Lemaire (1988)

Forewing length - f (2):  $40 \pm 0.5$ mm; m (16):  $32.3 \pm 1$ mm.

Flight period: January to March, May, and August to October.

Material examined. Guarani das Missões, 13.iii.1932, C. Biezanko leg., 1 m (MECB); Guarani das Missões, 21.iii.1932, C. Biezanko leg., 1 m (MECB); Guarani das Missões, 19.ii.1933, C. Biezanko leg., 1 m (MECB); Guarani das Missões, 05.v.1933, C. Biezanko leg., 1 m (MECB); São Sebastião do Caí, 16.x.1954, O. Baucke leg., 1 m (MRGC); Canela, 13.i.1955, O. Baucke leg., 1 m (MRGC); São Sebastião do Caí, 17.iii.1956, O. Baucke leg., 1 m (MRGC); Morro Reuter, 07.ix.1982, A. Moser leg., 1 m (CLAM); Morro Reuter, 12–16.x.1983, A. Moser leg., 1 m (CLAM); Morro Reuter, 24.x.1992, A. Moser leg., 1 m (CLAM); Morro Reuter, 06.x.1995, A. Moser leg., 1 m (CLAM); Morro Reuter, 04.x.1996, A. Moser leg., 1 f (CLAM); Barracão 21.ii.2001, R. A. Di Mare leg., 6 m (MCTP); Barracão 21.ii.2001, R. A. Di Mare leg., 1 m (MCTP); Morro Reuter, 18.viii.2001, A. Moser leg., 1 m (CLAM); Morro Reuter, 17–20.ix.2004, A. Moser leg., 1 f (CLAM); Morro Reuter, 17–20.ix.2004, A. Moser leg., 1 m (CLAM); Morro Reuter, 1–4.iii.2005, Moser leg., 1 f (CLAM); Maquiné, 6–7.iii.2005, A. Moser leg., 2 m (CLAM); São Francisco de Paula, 12–14.x.2004, Nunes, Prestes & Moser leg., 1 m (CLAM); São Francisco de Paula, 20–22.x.2006, F. Quadros leg., 1 m (MCTP).

***Scolesa hypoxantha* (W. Rothschild, 1907) – Fig. 42.***Adelowalkeria (Scolesa) hypoxantha*; Biezanko (1986)

Forewing length - m: 54mm [wingspan according to Lemaire (1988)].

Flight period: October.

Material examined. Santa Maria, 08.x.1971, D. Link leg., 1 m (MECB).

***Citioica anthonilis* (Herrich-Schäffer, [1854]) – Fig. 43.***Adelocephala anthonilis*; Mabilde (1986)*Adelowalkeria (Scolesa) anthonilis*; Biezanko (1986)

Forewing length - f: 75–106mm [wingspan according to Lemaire (1988)]; m (1): 29mm.

Flight period: January.

Host families: Fabaceae: Faboideae, Salicaceae.

Material examined. Derrubadas, 14–18.i.2000, A. Moser & Araújo leg., 1 m (CLAM).

***Oiticella luteciae* (Bouvier, 1924) – Fig. 44.**

Lemaire (1988)

Forewing length - f: 79mm [wingspan according to Lemaire (1988)]; m (7):  $31.9 \pm 1.6$ mm.

Flight period: January to April, August, and October.

Material examined. Guarani das Missões, 09.iii.1932, C. Biezanko leg., 2 m (MECB); Guarani das Missões, 04.iv.1932, C. Biezanko leg., 1 m (MECB); Guarani das Missões, 05.iv.1933, C. Biezanko leg., 1 m (MECB); Porto Alegre, viii.1940, R.G. Costa leg., 1 m (MRGC); Canela, 13.i.1955, O. Baucke leg., 1 m (MRGC); Morro Reuter, 30.x.1983, A. Moser leg., 1 m (CLAM); Pelotas, 13.i.1984, Abud leg., 1 m (MECB); Morro Reuter, 24.x.1992, A. Moser leg., 1 m (CLAM); Morro Reuter, 04.x.1996, A. Moser leg., 1 m (CLAM); Morro Reuter, 07–11.ii.1997, A. Moser leg., 1 m (CLAM); Derrubadas, 24.i.2001, R.

A. Di Mare leg., 1 m (MCTP); Morro Reuter, 1–4.iii.2005, A. Moser leg., 1 m (CLAM).

***Neocarnegia basirei* (Schaus, 1892) – Fig. 45.**

Biezanko &amp; Baucke (1948); Biezanko (1986); Lemaire (1988)

Forewing length - f (7):  $43.5 \pm 0.7$ mm; m: 54–73mm [wingspan according to Lemaire (1988)].

Host families: Fabaceae: Caesalpinioideae, Fabaceae: Faboideae.

Flight period: January, October and December.

Material examined. Pareci Novo, 20.x.1932, (no collector), 1 f (MAPA); Pareci Novo, 20.x.1933, (no collector), 1 f (MAPA); Pareci Novo, 21.x.1933, (no collector), 1 f (MAPA); São Leopoldo, i.1962, (no collector), 2 f (MAPA); Morro Reuter, 12.xii.1982, A. Moser leg., 1 f (CLAM); Salvador do Sul, 17.xii.1998, A. Specht leg., 1 f (MCTP); Morro Reuter, 10–14.x.2005, A. Moser leg., 1 m (CLAM).

## DISCUSSION

There are some species not included in the list because (A) - they were not found at the examined collections, (B) - their respective geographical distributions are discrepant following Lemaire (1980, 1988, 1996), and (C) - they were previously misidentified. The inclusion of these species must be verified with vouchers from the State:

## Arsenurinae

- *Paradaemonia pluto* (Westwood). Reported for Rio Grande do Sul by Silva *et al.* (1968), (as *Dysdaemonia pluto*) Ronna (1934), and Costa Lima (1936): A and B. Vouchered distribution: Rio de Janeiro.

- *Copiopteryx semiramis phoenix* (Deyrolle). Reported for Rio Grande do Sul by Costa Lima (1936), and Biezanko & Baucke (1948), (as *Eudemonia semiramis phoenix*) Mabilde (1896) and Silva *et al.* (1968): A and B. Vouchered distribution: Minas Gerais, Espírito Santo, Rio de Janeiro and São Paulo.

- *Rhescyntis hippodamia hippodamia* (Cramer). Reported for Rio Grande do Sul (as *Machaerosema martii*) by Silva *et al.* (1968): A and B. Vouchered distribution: Bolivia, Brazil (Amapá, Pará, Distrito Federal and Goiás), Colombia, Equador, Guyana, French Guyana, Peru, Surinam and Venezuela.

- *Arsenura aspasia* (Herrich-Schäffer). Reported for Rio Grande do Sul by Biezanko & Seta (1939), and Biezanko & Baucke (1948), (as *Rhescyntis aspasia*) Mabilde (1896), Silva *et al.* (1968) and Biezanko (1986): B and C. Vouchered distribution: Rio de Janeiro. We identified the specimens found at the Biezanko (MECB) and Mabilde (MCNZ) collections as *Arsenura binndulata*.

- *Dysdaemonia boreas* (Cramer). Reported for Rio Grande do Sul (as *Rhescyntis boreas*) by Biezanko



(1986): B and C. Vouchered distribution: Central America, Andes (low altitudes), and Guyana-amazonian region, Brazil (Pará and Mato Grosso). We identified the specimen found at the Biezanko collection (MECB) as *Dysdaemonia brasiliensis*.

- *Dysdaemonia fosteri* W. Rothschild. Reported for Rio Grande do Sul (as *Rhescyntis fosteri*) by Biezanko (1986): A and B. Vouchered distribution: Bolivia, Paraguay and Argentina (Jujuy, Tucuman).

- *Arsenura pandora* (Klug). Reported for Rio Grande do Sul by Costa Lima (1936), (as *Rhescyntis pandora*) Mabilde (1896), Ronna (1933), Biezanko (1986) and Silva *et al.* (1968): B and C. Vouchered distribution: Goiás and Minas Gerais (endemic to Brazilian plateaus). We identified the specimens found at the Biezanko collection (MECB) as *Arsenura orbignyana*.

#### Ceratocampinae

- *Adeloneivaia irrorata* (Schaus). Reported for Rio Grande do Sul by Biezanko (1986): A and B. Vouchered distribution: Mexico, Belize and Guatemala.

- *Scolesa leucantha* (Boisduval). Reported for Rio Grande do Sul by D'Abreu (1995), and (as *Adelwalkeria (Scolesa) argyracantha* (Boisduval)) by Biezanko (1986): B and C. Vouchered distribution: endemic to southeastern Brazil - Rio de Janeiro and São Paulo. We identified the specimens found at the Biezanko collection (MECB) as *Scolesa viettei* after genitalic observation.

- *Oiticella brevis* (Walker). Reported for Rio Grande do Sul (as *Adelwalkeria brevis* and as *Adelwalkeria (Scolesa) lanaris* (Rothschild)) by Biezanko (1986): B and C. Vouchered distribution: northeast, central-west and southeast of Brazil. We identified the specimens found at the Biezanko collection (MECB) as *Oiticella luteiciae* after genitalic observation.

- *Citheronia brissotii meridionalis* (Bouvier). Reported for Rio Grande do Sul by Biezanko & Baucke (1948), Silva *et al.* (1968) and Biezanko (1986): B and C. Vouchered distribution: Argentina. We identified the specimens found at the Biezanko collection (MECB) as *Citheronia brissotii brissotii*.

- *Citheronia splendens splendens* (Druce). Reported for Rio Grande do Sul (as *Eacles splendens splendens*) by Mabilde (1896), Ronna (1933), Costa Lima (1936) and Silva *et al.* (1968): A and B. Vouchered distribution: North America.

- *Eacles imperialis cacicus* (Boisduval). Reported for Rio Grande do Sul (as *Citheronia imperialis cacicus*) by Ronna (1933), Biezanko *et al.* (1957) and Biezanko (1986): B and C. Vouchered distribution: Guyana-amazonian region. We identified the specimens found at the Biezanko collection (MECB) as *Eacles imperialis*

*magnifica*. Lemaire (1988) defined *E. imperialis* as a complex of 11 subspecies distributed from southern Canada to northern Argentina. Phenotypically and according to its range our vouchers were identified as *E. i. magnifica*.

- *Eacles imperialis imperialis* (Drury). Reported for Rio Grande do Sul by Biezanko & Baucke (1948), Biezanko *et al.* (1949) and Silva *et al.* (1968): A and B. Vouchered distribution: United States.

- *Eacles penelope* (Cramer). Reported for Rio Grande do Sul by Mabilde (1896), Ronna (1933), Costa Lima (1936), Biezanko *et al.* (1949), Silva *et al.* (1968) and Biezanko (1986): B and C. Vouchered distribution: Central America and South America; in Brazil, Santa Catarina is the southern State in its distribution; it flies just in low altitude. We identified the specimens found at the Biezanko collection (MECB) as *Eacles ducalis*. These two species are similar in their wing facies, but the distinction is visualized on the sub-circle discal spot, which is hyaline in *E. penelope*. The high frequency of citations may be related to that similarity.

We kept in the list three species of Ceratocampinae reported by Biezanko (1986), although we had not found specimens in the examined collections. These moths have their distribution recorded near to Rio Grande do Sul following Lemaire (1988, 1996) and we admit that they probably occur in the State. These species are:

- *Cicia crocata*, it occurs in the central-meridional region of Brazil.

- *Othorene cadmus*, its distribution is from Espírito Santo to Santa Catarina.

- *Psilopygida crispula*, it occurs in northeastern Argentina (Entre Ríos).

**Well-sampled and undersampled areas.** The survey of Rio Grande do Sul has been done sporadically over several years. There are 49 sampled localities in different environments in the State, however, four areas have the greatest effort—Porto Alegre (84), Morro Reuter (82), São Francisco de Paula (59), and Pelotas (59) are the best-known cities, comprising 53,4% of our data. Pelotas is located in the southern part of the State, near Patos lagoon in the Riograndense Shield; it includes fields, savannas and semi-deciduous tropical forest. Biezanko and Irmãs Figueiredo had done collecting in this region in the early 1940's to 1970's, but since then few expeditions have been done. Porto Alegre, the State's capital, has always had entomologists; nonetheless, due to extensive urbanization, few places remain as refuges for the species. The city is in the beginning of the mountain ridge of the sandstone-

basaltic plateau in a transitional area between the biomes, now characterized as an ecological tension zone. Morro Reuter is 50 km north from Porto Alegre; it is a rich place with conserved hillsides and an altitude lying between 400–600m. The vegetation includes semi-deciduous tropical forest and few araucaria trees; one of us (A. Moser) has collected Lepidoptera specimens there since 1980. Finally, São Francisco de Paula is 60 km northeast from Morro Reuter; it is among the highest places in the State where the elevation lies above 800m. Araucaria moist forest and hillsides with semi-deciduous and even Atlantic moist forest are present in this region. The PUCRS' Entomology laboratory has frequently done expeditions to this area since the early 1990's.

In addition, other regions are relatively well known. Biezanko (1986) reported on the Lepidoptera of the Missioneira region of Rio Grande do Sul, located in the west-northwest area on the sandstone-basaltic plateau with altitude lying between 200–400m. Nevertheless, we have only 19 records for Guarani das Missões city and 4 for Cerro Largo. It is unfortunate that many specimens from different regions might have been lost due to past lack of care at the entomological collections.

The west side of Rio Grande do Sul, especially the fields and savannas of the southwest, is very poorly documented. Moreover, the anthropogenic homogenization of the landscape as a result of agricultural practices has grown rapidly throughout the south, mainly by silviculture and cattle-raising. Thus, we suggest additional collecting especially in these undersampled areas.

Finally, despite the obvious shortcomings of our data, some comments can be made.

#### **Abundant species and historical presence.**

Together, *Arsenura biundulata* (33) and *Paradaemonia thelia* (33) represent 44% of the Arsenurinae sampling effort. Similarly, *Eacles imperialis magnifica* (56), *Eacles ducalis* (37) and *Citheronia brissotii brissotii* (38) comprise 34,4% of the ceratocampine vouchers. Such species have been collected since the early part of the last century, indicating abundant populations and wide distribution over both biomes, except for *P. thelia*, which seems to occur mainly in low altitudes at the Pampa. This wide range may explain phenotypic variation in some of these species. *C. b. brissotii*, particularly, shows variation on its hindwing where the size of the basal mark can cover more than a half the wing or not. Also, *E. i. magnifica* and *E. ducalis* vary in the small spots along the wings, being more or less numerous.

There are some historically recorded species that have not been seen in a long time: *Citheronia johnsoni* (since 1954), *Citheronia laocoon* (since 1983),

*Citheronia vogleri* (since 1945), *Cicia nettia* (since 1933), and *Scolesa hypoxantha* (since 1971).

*Citheronia johnsoni* was described in 1928 by Schaus, and its type locality is Santa Cruz do Sul, situated at the State's middle-west in the Central Depression. Lemaire (1988) wrote that it is probably endemic to southern Brazil. We examined two vouchers from Porto Alegre (140 km east from Santa Cruz do Sul) collected in 1939 and 1959. This species may actually be restricted in its distribution, yet additional collecting in its type locality and surrounding areas has to be done. Similarly, *C. laocoon* was seen in Porto Alegre and nearby cities beyond, Pelotas, Cerro Largo, and Morro Reuter between 1948 and 1983; it has a wide distribution at the eastern Andes of almost all South America (Lemaire 1988). Gallo *et al.* (2002) consider this species to be a pest of *Coffea arabica* L., an important Brazilian product. Regardless, its population seems to be small in Rio Grande do Sul, or at least not often seen.

*Citheronia vogleri* was collected in Pelotas by Irmãs Figueiredo in the 1940's; following Lemaire (1988) it occurs in Bolivia, Paraguay, Argentina and Uruguay; he reported the difficulty in defining its distribution due to disjointed data. He added that it was found in abundance from Entre Ríos (Argentina), which indicates incompatibility with its presence in areas of semi-arid plateaus and even high mountains where it has been primarily reported. Entre Ríos and Pelotas are in the Pampa. However, we cannot suggest any conclusive argument about this and to consider this species rare or a stray for Rio Grande do Sul would require further evidence. The lack of such evidence also applies to *C. nettia* and *S. hypoxantha*, collected on the State's west side.

**Ecological notes.** Some species appear to inhabit mostly specific locations in Rio Grande do Sul. The arsenurine moths *Caio romulus*, *Paradaemonia meridionalis*, *Rhescyntis pseudomartii*, and *Titaea tamerlan tamerlan*, and *ceratocampine Eacles bertrandi*, and *Procitheronia purpurea* seem to live at high altitudes of the State's northeast and its hillsides regions (Maquiné) in the Atlantic Forest biome. They occur in São Francisco de Paula and adjacent areas where the elevation lies over 800m. One of us (A. Moser) has done collecting in Morro Reuter (550m) since 1980 and did not find these species; on the other hand, going 60 km to northeast and 250m up we find all of them. Rio Grande do Sul is their extreme meridional extent. The new records for the State, *R. pseudomartii*, *T. t. tamerlan*, *E. bertrandi* were collected in those conditions; *E. mayi* was also seen in Porto Alegre in 1960, and *Mielkesia paranaensis* was collected just in Piratini (350m). *Almeidella approximans* has specimens





FIGS. 46–48. Distribution maps of Arsenurinae of Rio Grande do Sul, Brazil. **46.** *Arsenura armida*, *Arsenura biundulata*, *Arsenura orbignyana*, and *Arsenura xanthopus*. **47.** *Caio romulus*, *Dysdaemonia brasiliensis*, *Titaea tamerlan tamerlan*, *Paradaemonia meridionalis*, and *Paradaemonia thelia*. **48.** *Rhescyntis pseudomartii*, *Copiopteryx derceto*, and *Copiopteryx sonthonnaxi*.



FIGS. 49–52. Distribution maps of Ceratocampinae of Rio Grande do Sul, Brazil. **49.** *Eacles imperialis magnifica*, *E. ducalis*, *E. mayi*, and *E. bertrandi*. **50.** *Citheronia brissotii brissotii*, *C. johnsoni*, *C. laocoon*, and *C. vogleri*. **51.** *Proclitronia purpurea*, *Othorene purpurascens*, *Cicia nettia*, *Alneidella approximans*, *A. corrupta*, and *Mielkesia paranaensis*. **52.** *Psilopygida walkeri* and *Syssphinx molina*.



FIGS. 53–56. Distribution maps of Ceratocampinae of Rio Grande do Sul, Brazil. **53.** *Adeloneivaia subangulata subangulata*, *A. catharina*, and *A. fallax*. **54.** *Adelowalkeria flavosignata* and *A. tristygma*. **55.** *Scolesa totoma*, *S. viettei*, and *S. hypoxantha*. **56.** *Citioica anthoniis*, *Oiticella luteciae*, and *Neocarnegia basirei*.

only from São Francisco de Paula in our data; however, this species was reported by Biezanko (1986) in the Missioneira region.

The majority of Rio Grande do Sul's species are endemic to east-southeastern Brazil, following Lemaire (1980, 1988, 1996). In the Arsenurinae, only 4 species do not inhabit exclusively this region: *Arsenura armida* (widely distributed from Mexico to Brazil), *A. orbignyana* (Bolivia and Brazil), *Paradaemonia meridionalis* (Brazil's central-meridional portion), and *P. thelia* (Paraguay and Brazil). In the Ceratocampinae, 16 species are endemic to the east-southeast of Brazil - *Eacles imperialis magnifica*, *E. ducalis*, *E. mayi*, *E. bertrandi*, *Citheronia brissotii brissotii*, *C. johnsoni*, *Procitheronia purpurea*, *Othorene cadmus*, *Cicia nettia*, *Almeidella approximans*, *A. corrupta*, *Mielkesia paranaensis*, *Adeloneivaia fallax*, *Scolesa totoma*, *S. viettei*, and *Neocarnegia basirei*. This area includes the Atlantic forest biome and the Pampa biome at the southern extreme, where not all species were observed.

Also, *Cicia crocata* is endemic to Brazil, flying over the central-meridional region.

The greatest number of species in the State occurs in an area corresponding to the beginning of the mountain ridge and the hillside regions, located on the east and northeast of the sandstone-basaltic plateau in the Atlantic Forest biome (see figs. 46–56). The greater diversity and abundance may be due to the variation in vegetation (Fig. 1) and the hypsometric characteristic of the region. Similarly, the lower diversity and abundance elsewhere in the State could be due to the anthropogenic homogenization of the landscape. However, sampling effort has been much greater in this region as well, and we suggest that additional collecting in undersampled regions may change our current understanding of the lepidopteran diversity in Rio Grande do Sul.

**Dichotomous keys.** Figures 2 and 3 show some morphological aspects used in the keys.



## Dichotomous Keys

## Arsenurinae

- 1 Four concavous median bands on the forewing.....*Rhescyntis pseudomartii*  
 1' Forewing with another aspect.....2  
 2 Submarginal small black spots below CuA1 to the forewing's end  
 and on the hindwing's anal margin to CuA2.....*Titaea tamerlan tamerlan*  
 2' Wings without spots like above.....3  
 3 Forewing with hyaline sub-triangular discal spot; hindwing prolongation longer than wing.....4  
 3' Forewing with hyaline sub-circular discal spot or discal spot absent;  
 hindwing prolongation absent or less than wing.....5  
 4 Submarginal hyaline marks between M1-CuA1.....*Copiopteryx sonthonnaxi*  
 4' Submarginal hyaline marks absent.....*Copiopteryx derceto*  
 5 Intervenous sub-triangular ribbon-like marks on the submarginal region of the wings.....6  
 5' Intervenous sub-triangular ribbon-like marks absent.....7  
 6 Brown frontal coloration between scapes.....*Paradaemonia meridionalis*  
 6' White frontal coloration between scapes.....*Paradaemonia thelia*  
 7 Hyaline sub-circular discal spot on the wings;  
 concave line on the anal angle to hindwing prolongation.....*Dysdaemonia brasiliensis*  
 7' Simple discal spot or with white axis; concave line on the anal angle absent.....8  
 8 Simple discal spot.....9  
 8' Discal spot with white axis.....10  
 9 Clear intervenous marks on the submarginal region of the hindwing.....*Arsentra biundulata*  
 9' Clear intervenous marks on the submarginal region absent.....*Arsenura armida*  
 10 Two submarginal black spots between M1-M3.....11  
 10' Submarginal black spots between M1-M3 absent.....*Caio romulus*  
 11 Brown tarsomeres.....*Arsenura orbignyana*  
 11' Yellow tarsomeres.....*Arsentra xanthopus*

## Ceratocampinae

- 1 Hyaline marks along the wings.....*Neocarnegia basirei*  
 1' Wings without such hyaline marks.....2  
 2 Subcircular discal spot with axis; small intervenous hyaline marks on forewing  
 submarginal region between M1 and CuA1.....*Procitheronia purpurea*  
 2' Discal spot, if present, with another aspect; hyaline intervenous marks absents.....3  
 3 Series of intervenous spots subovular on forewing limbal area.....4  
 3' Limbal area with another aspect.....7  
 4 Series of intervenous spots merged.....*Citheronia laocoon*  
 4' Intervenous spots not merged.....5  
 5 Ground color black.....*Citheronia vogleri*  
 5' Ground color other than black.....6  
 6 Hindwing discal spot subcircular, touching basal mark or visible just on the ventral face..*Citheronia brissotti brissotti*  
 6' Hindwing discal spot sub-circular, not touching basal mark, visible on both facies.....*Citheronia johnsoni*  
 7 Subcircular discal spot on hindwing.....8  
 7' Subcircular discal spot on the hindwing absent.....12  
 8 Forewing outer margin cut.....*Syssphinx molina*  
 8' Outer margin not cut.....9

**Dichotomous Keys** (continued)**Ceratocampinae** (continued)

- 9 Discal spot on wings white; meso-thorax with pair of white subcircular marks.....*Eacles dncalis*
- 9' Discal spot and mesothoracic marks, if present, with another color.....10
- 10 Clear yellow limbal region on the hindwing .....*Eacles imperialis magnifica*
- 10' Limbal region with another color.....11
- 11 Forewing apex and tornus angulated.....*Eacles mayi*
- 11' Forewing apex and tornus sub-rounded.....*Eacles bertrandi*
- 12 Distal bands on wings formed by intravenous concave lines.....*Mielkesia paranaensis*
- 12' Distal bands, if present, with another aspect.....13
- 13 Strongly marked venation on the wings.....14
- 13' Weakly marked venation on the wings.....16
- 14 Ground color yellow.....*Adeloneivaia fallax*
- 14' Ground color brown or gray.....15
- 15 Hindwing ground color gray.....*Citioica anthonilis*
- 15' Hindwing ground color brown, with a purple basal mark.....*Oiticella luteicia*
- 16 Discal spot on forewing white or absent.....7
- 16' Discal spot on forewing black.....26
- 17 Two to four subcircular discal spots on forewing.....18
- 17' Zero or one discal spots on forewing.....19
- 18 Abdomen with brown inter-segmental rings;distal band absent on forewing.....*Adelowalkeria flavosignata*
- 18' Abdomen without rings;distal band present on forewing.....*Adelowalkeria tristygma*
- 19 Pink basal and limbal regions on forewing.....*Psilopygida walkeri*
- 19' Basal and limbal regions on forewing with other colors.....20
- 20 Distal band present on forewing.....21
- 20' Distal band absent on forewing.....23
- 21 Ground color brown.....*Almeidella corrupta*
- 21' Ground color other than brown.....22
- 22 Meso and meta-thoracic legs white;hindwing ground color purple.....*Almeidella approximans*
- 22' Legs yellow; hindwing ground color yellow.....*Cicia nettia*
- 23 Abdominal ground color black.....*Scolesa totoma*
- 23' Abdominal ground color other black.....24
- 24 Convex distal band directed to forewing basal area.....*Cicia crocata*
- 24' Rectilinear or weakly concave distal band directed to forewing inner margin.....25
- 25 Forewing outer margin convex.....*Othorene purpurascens*
- 25' Forewing outer margin rectilinear.....*Othorene cadmus*
- 26 Forewing tornus angulated.....27
- 26' Forewing tornus sub-rounded.....28
- 27 Hindwing purple.....*Adeloneivaia subangulata subangulata*
- 27' Hindwing brownish-yellow.....*Adeloneivaia catharina*
- 28 Thorax gray with yellow ring.....*Scolesa hypoxantha*
- 28' Thorax with other aspect.....29
- 29 Purple discal spot on the forewing ventral face; hindwing purple.....*Scolesa viettei*
- 29' Forewing without purple spot on ventral face;hindwing with other color.....*Psilopygida crispula*



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